

NAVISTAR, INC

DEFECT INFORMATION REPORT

TO: Manager
Engine Programs Group (6405J)
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

REPORT ID: 15-I6-12000801-01
Revision.: -
Ref. Investigation.: -
Ref. AFC:-
Ref. VER:- 15515

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DATE : August 19, 2015

The following Defect Information Report is submitted in accordance with 40 CFR §1068.501.

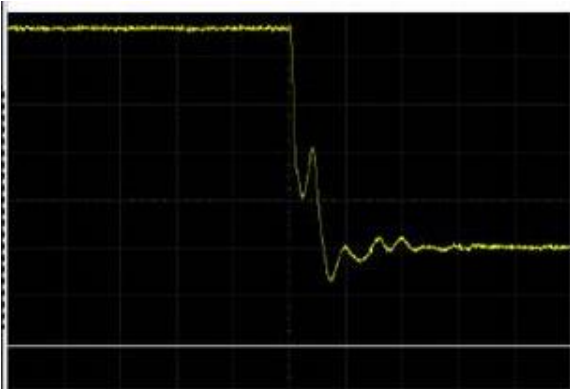
[40 CFR §1068.501(d)(1)] MANUFACTURER CONTACT INFORMATION

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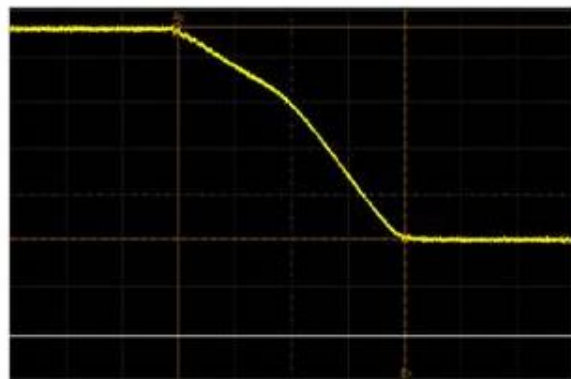
[40 CFR §1068.501(d)(2)] DEFECT DESCRIPTION

This report addresses a calibration defect regarding the Electronic Control Module (ECM).

Navistar certified N9 and N10 engines with SCR aftertreatment for the 2014 model year. To help reduce CPU loading of the ECM the clock frequency was increased from 56 MHz to 64MHz. When the clock frequency was increased the clock signal slew rate was also increased (mistakenly). The increased slew rate caused “ringing” of the clock signal which in turn caused read errors to occur in the ECM and ultimately memory corruption (reference left photo below). When the clock slew rate was slowed to the original rate the ringing was completely eliminated (reference right photo below) along with the read errors and occurrences of memory corruption.



Current situation: Without Slew Rate Control or fast slew rate (Frequency 1 MHz)



Solution: With Slew Rate Control or slow slew rate (Frequency 1 MHz)

The memory corruption occurred most often at low ambient temperatures. This caused the ECM to set fault code 629/12 indicating an “internal chip error”, and illuminating the MIL resulting in replacement of the ECM.

[40 CFR §1068.501(d)(3)] DESCRIPTION OF VEHICLES/ENGINES AFFECTED

<u>Engine Family Name</u>	<u>Model Year</u>	<u>Engine Model</u>	<u>Engine Plant Ship Dates</u>
ENVXH05700SA	2014	N9, N10	2014
FNVXH05700SA	2015	N9, N10	2015

[40 CFR §1068.501(d)(4)] NUMBER OF ENGINES ESTIMATED TO HAVE DEFECT

<u>Engine Family Name</u>	<u>Number of Engines Affected</u>	<u>Total US Production</u>	<u>Percent of Family Affected</u>
ENVXH05700SA	1,213	1,213	100%
FNVXH05700SA	2,490	3767 (estimated)	66%

[40 CFR §1068.501(d)(5)] EVALUATION OF EMISSIONS IMPACT

This defect has no impact on emissions.

[40 CFR §1068.501 (d)(6)] ANTICIPATED MANUFACTURER FOLLOW-UP

Navistar intends to perform a voluntary emissions recall (#15515), consisting of a new ECM calibration. This calibration will return the clock slew rate to the pre- 2014 MY value.

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